

## **Hotspots/simplex nodes in 2m & 70cm satellite subbands in the US**

For amateur operators in the U.S., FCC Part 97 has a bit to say about the way we should operate in the 145.8-146.0 and 435-438 MHz amateur satellite subbands. Regulations in many other countries are not as detailed as those established by the FCC on how we should operate on different frequencies and bands. This includes where hotspots and similar systems used for digital voice modes (i.e., DMR, D-Star, C4FM/Fusion) and other technologies like EchoLink and IRLP, should operate.

Auxiliary stations are defined at 97.3(a)(7):

“An amateur station, other than in a message forwarding system, that is transmitting communications point-to-point within a system of cooperating amateur stations.”

This definition includes "remote bases;" the nodes for systems like EchoLink and IRLP; and hotspots used for digital-voice modes like D-Star, DMR, and Fusion/C4FM (among others); as well as stations using these hotspots and nodes. Auxiliary stations are not allowed in the 145.8-146.0 and 435-438 MHz satellite subbands per 97.201(b) – among other subbands in the 2m and 70cm amateur bands.

Repeaters are defined at 97.3(a)(40) as:

"Repeater. An amateur station that simultaneously retransmits the transmission of another amateur station on a different channel or channels."

Since most hotspots are operating on a single frequency, they would not qualify as a repeater. Even if the hotspot operates like a repeater as defined above, repeaters are not permitted to use 145.5-146.0 MHz and 435-438 MHz per 97.205(b).

Beyond these two sections, Part 97 also has 97.101(a):

“In all respects not specifically covered by FCC Rules each amateur station must be operated in accordance with good engineering and good amateur practice.”

Whether the hotspot is interfering with a satellite downlink in a particular area, or it is interfering with the satellite uplink affecting a much larger area, this would not be good amateur practice.

In addition to subbands where hotspots are not permitted, 97.101(b) is also relevant:

“Each station licensee and each control operator must cooperate in selecting transmitting channels and in making the most effective use of the amateur service frequencies. No frequency will be assigned for the exclusive use of any station.”

Frequencies used by satellites are usually incapable of being changed, and have been registered with a regulator like the FCC and the ITU. Hotspots are usually frequency-agile, and the frequencies used by those systems can be changed to avoid potential interference to satellites and other stations.

And all of this is in addition to local bandplans, which may already have provisions for hotspots or simplex nodes.